

SHIBAURA TRACTOR

MODELS

**SX 21
SX 24**

**ASSEMBLY
INSTRUCTIONS**

GENERAL INFORMATION

APPROXIMATE ASSEMBLY TIME — 2.5 HOURS

PLEASE READ COMPLETELY THE ASSEMBLY INSTRUCTIONS BEFORE ASSEMBLY START !

! CAUTION !

Appropriate methods and procedures are essential for safe, reliable operation of all equipment as well as the personal safety of all individuals doing the work. The assembly manual provides general directions for accomplishing assembly with tested, effective techniques. To assure reliability, follow procedure instructions given in this manual. Failure to comply may result in minor or moderate injury.

There are numerous variations in procedures and techniques for assembling equipment, tools, as well as in the skill of the individual doing the work. This manual cannot possibly anticipate all such variations and provide advice or cautions as to each.

General safety precautions should include :

- Major components are well supported during assembly.
- Wearing safety glasses during assembly.
- Using the proper tools, such as a brass drift or hammer to drive pins.
- Equipment is lowered to the ground or properly supported during lubrication and filling fluid levels.

NOTE The packing places of the attached parts are subjected to variation without a previous notice.

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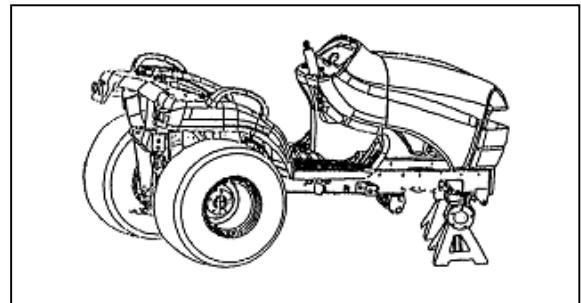
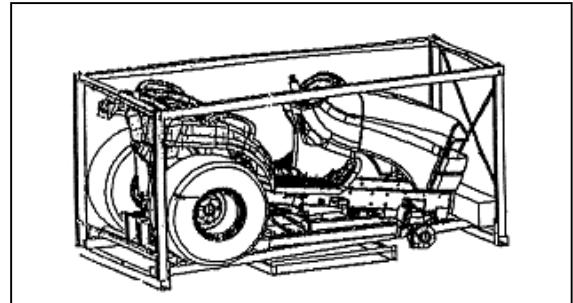
PREPARATIONS

The **SX21 / SX24** Tractor is shipped partially disassembled in a crate.

This manual provides the information needed to uncrate and assemble the tractor

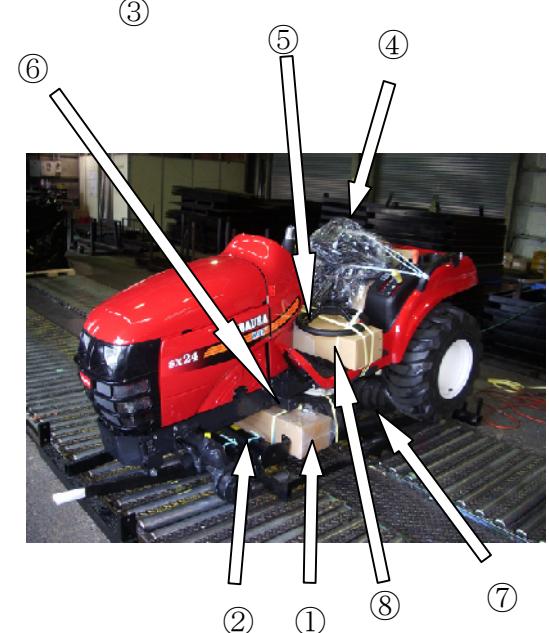
UNCRATING THE TRACTOR

1. Dismantle the crate by removing all hardware that holds the sides of the crate together.
2. Cut the packing bands, and remove the loose items that are listed next.
3. Detach the tractor from the base of the crate by removing the wire fasteners.
4. Use a suitable lifting device to hoist the tractor off the crate. Discard all crating materials at this time.
5. Place the tractor on jack stands in a secure manner.
6. Remove the front wheels which are put on the bottom frames of the crate.
7. Open the carton box and verify all parts are present.
8. Open the toolbox located on the back of the tractor and verify that all parts are present.



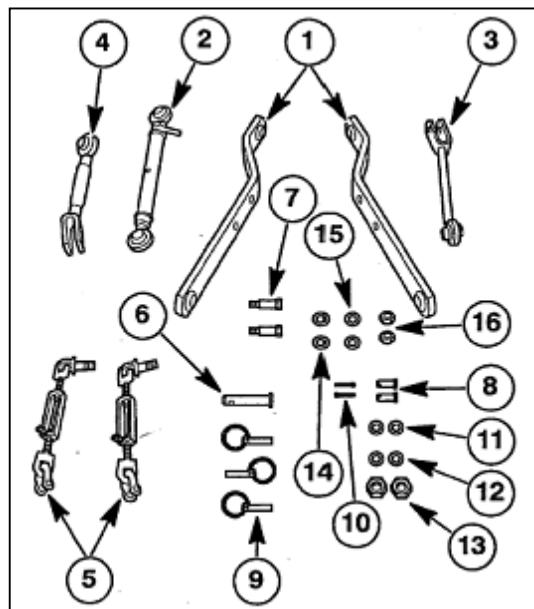
The tractor is crated with the following parts removed.

1. Three Point linkage
2. ROPS frame :L&R
3. ROPS frame :TOP
4. Seat & Seat belt assy.
5. Steering wheel
6. Steering shaft.
7. Front wheels.
8. Hardware.



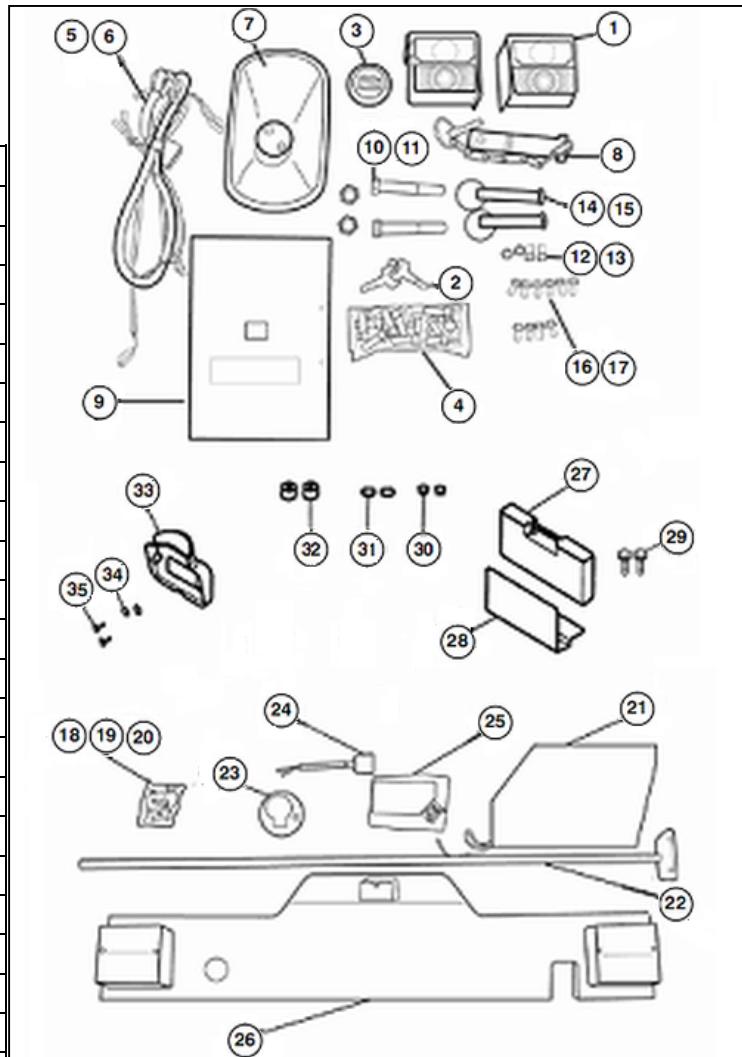
THREE POINT LINKAGE CARTON BOX

ITEM	DESCRIPTION	QTY
1	Lower links	2
2	Top link	1
3	Lift rod left	1
4	Lift rod right	1
5	Check chains	2
6	Top link pin	1
7	Shoulder bolts	2
8	Clevis pin	2
9	Lynch pin	3
10	Cotter pin	2
11	M12 flat washer	2
12	M12 lock washer	2
13	M12 Nut	2
14	M16 flat washer	2
15	M16 lock washer	2
16	M16 Nut	2



HARDWARE CARTON BOX

ITEM	DESCRIPTION	QTY
1	Hazard combination lamp (FLASHER)	2
2	Key set	1
3	Steering wheel cap	1
4	Bolt kit (for wheels)	1
5	ROPS wire harness	2
6	Rear board wire harness	1
7	Rear view mirror	1
8	Drawbar pin	1
9	Operators manual	1
10	M16 bolt (for ROPS)	2
11	M16 lock nut (for ROPS)	2
12	M10 bolt (for ROPS)	2
13	M10 nut (for ROPS)	2
14	Pin (for ROPS)	2
15	Spring (for stop the pin)	2
16	M8 bolts (for lamp assy)	6
17	M8 bolt (for Mirror/color :black)	2
18	M8 Nut (for Mirror/color :black)	2
19	M8 bolt (for P-brake (8-20))	2
20	M8 Nut (for P-brake)	2
21	Parking brake boot	1
22	Mirror stay	1
23	Trailer socket	1
24	Wire harness (for Trailer socket)	1
25	Bolt kit (for Trailer socket (M5))	1
26	Rear board assembly	1
27	Tool box	1
28	Holder	1
29	M8 bolt (for Holder)	2



30	M8 Nut (for Holder)	2
31	Lock washer (for Holder)	2
32	Collar	2
33	Reflector	2
34	Washer	4
35	Screw	4

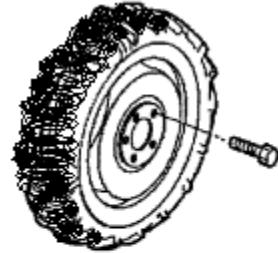
WHEELS INSTALLATION

Note: Use the hardware from the Bolt Kit (for wheels)

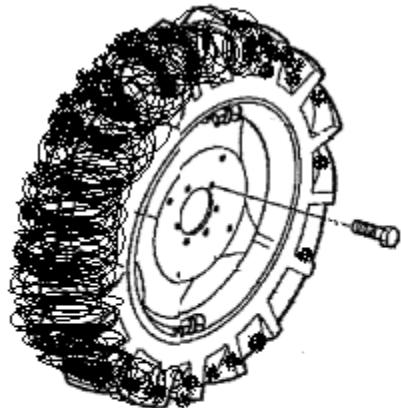
1. Check the air pressure of the tires as stated in the chart below.

SIZE	MAX Inflation pressure
Front tire (R4) 18×8.50-8	150kPa
Front tire (Turf) 18×8.50-8	140kPa
Rear tire (R4) 26×12.00-12	170kPa
Rear tire (Turf) 26×12.00-12	140kPa

2. Use a floor jack to lift the tractor and Install the wheel assemblies onto the proper side of the tractor with lug bolts.



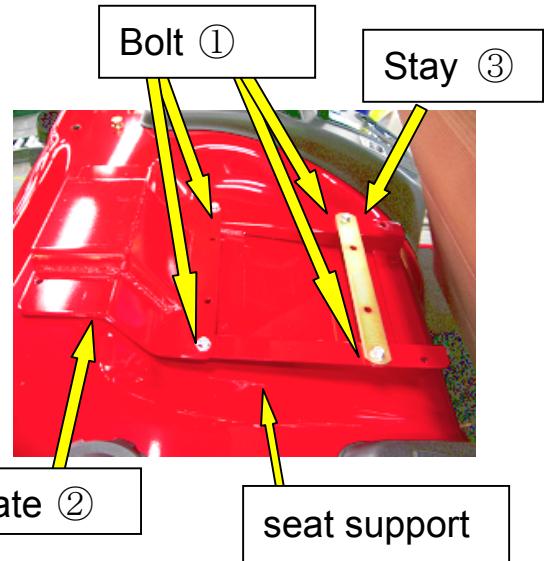
Front Wheel Bolt Torque
1/2-20UNF Bolts • • 88 N.m



Rear Wheel Bolt Torque
7/16-20UNF Bolts • • 122 N.m

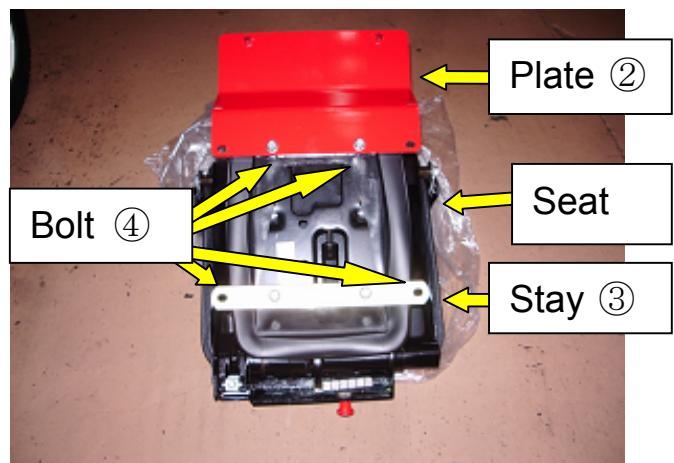
SEAT INSTALLATION

1. Remove the four bolts,1, and detach the plate,2, and stay,3, from the seat support of the tractor. And keep the four detached bolts,1.



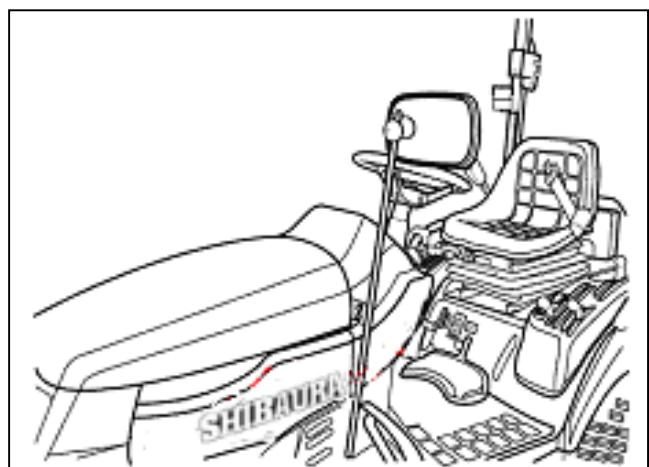
2. Fasten the plate,2, beneath the seat and fasten the stay,3,beneath the seat. secure using the four M8X20 bolt,4.

Torque to $12.7\text{ -}16.7\text{N}\cdot\text{m}$



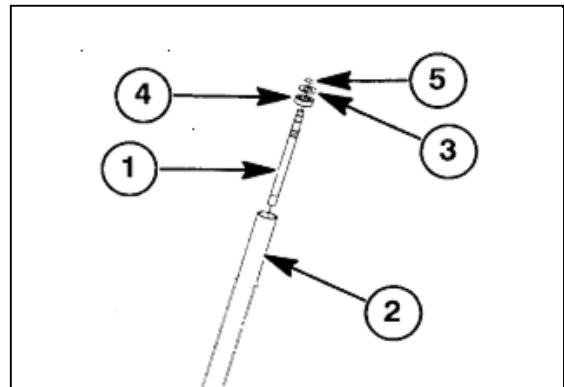
3. Install the seat assembly on the seat support of the tractor. Secure using previously removed four M8X20 bolts,1,

Torque to $12.7\text{ -}16.7\text{N}\cdot\text{m}$



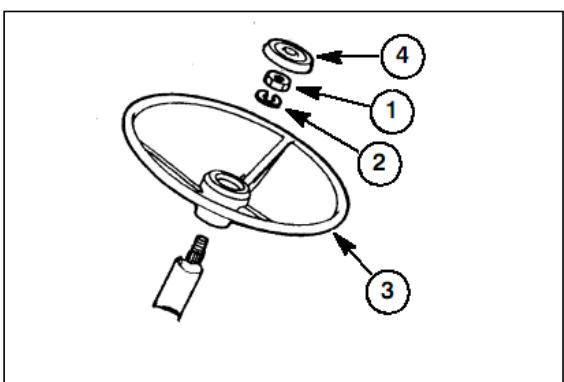
STEERING SHAFT INSTALLATION

1. Set the steering shaft, 1, into the steering column,2, by aligning it with the spline.
2. Put the retaining rings ,3,(c type) into the groove of the steering column.
3. Fix them by using clip,5.



STEERING WHEEL INSTALLATION

1. Remove nut, 1, and lock washer,2, from the steering wheel shaft
2. Install the steering wheel,3, onto the shaft and secure with lock washer,2, and nut,1.
Torque to: 25.5-33.3 N·m
3. Install the steering wheel cap,4, into steering wheel hub

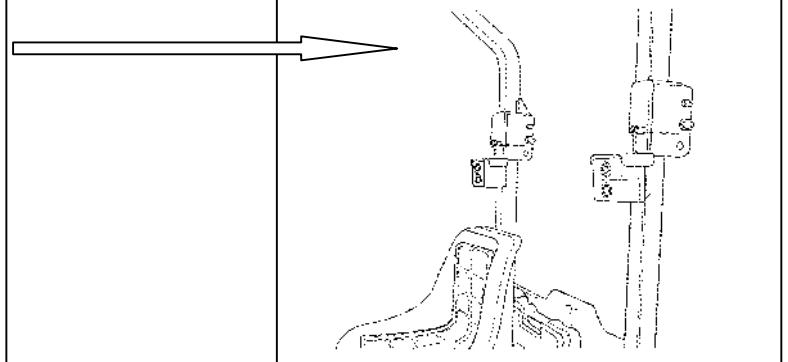
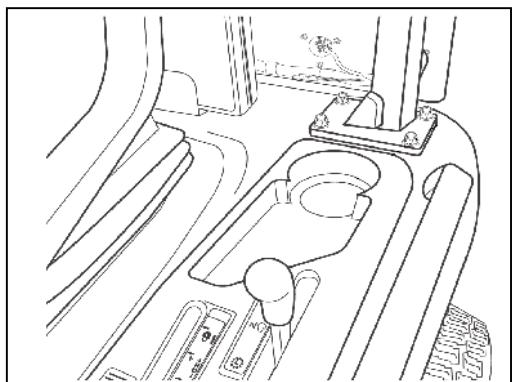
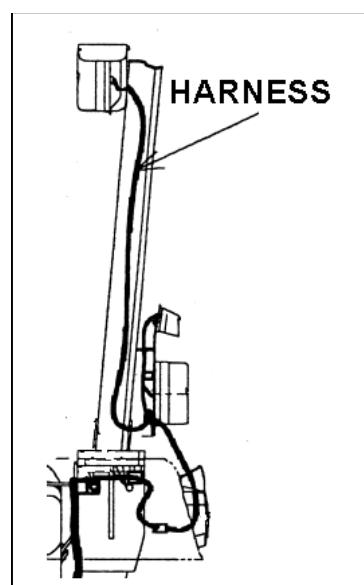


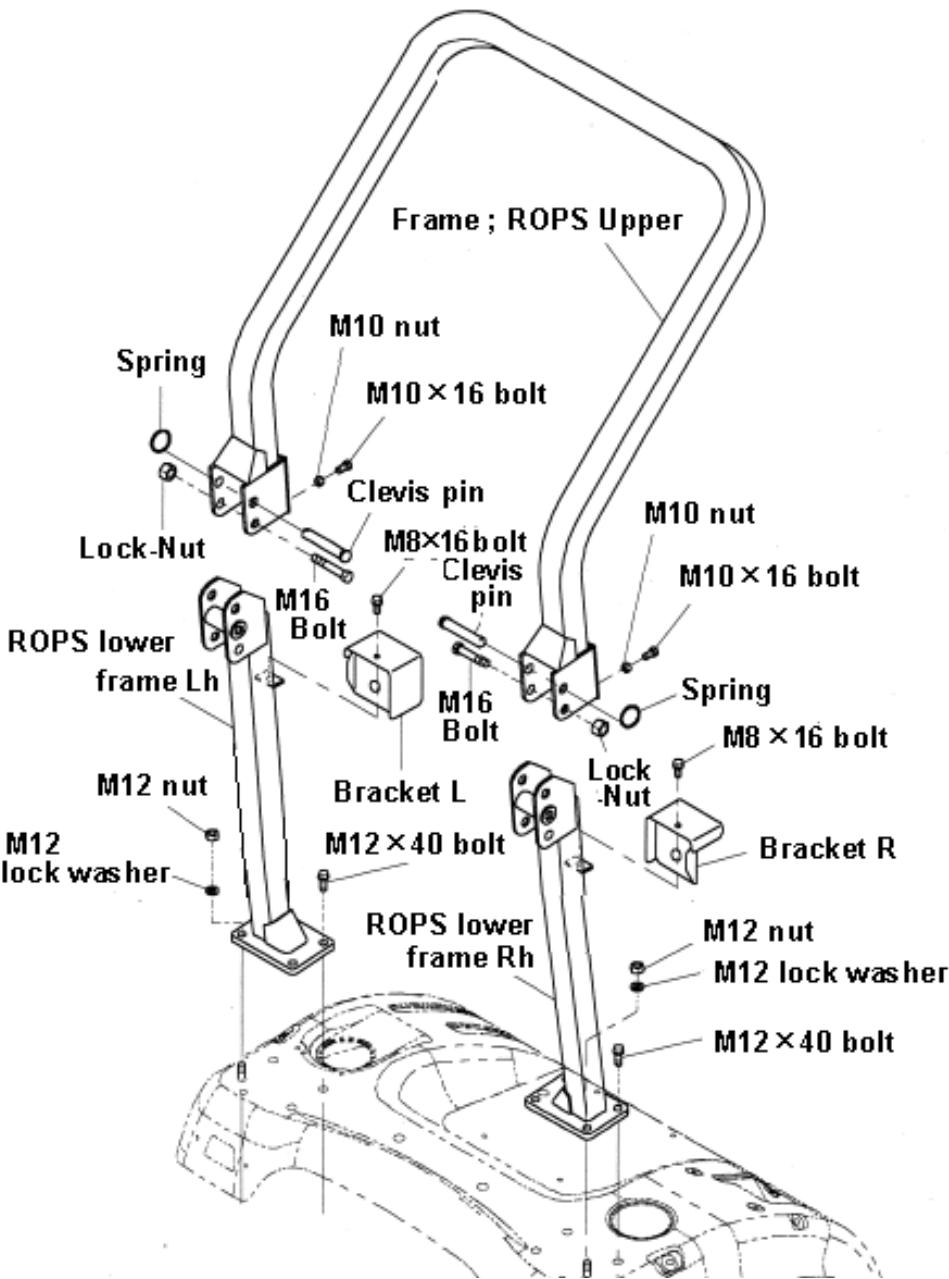
NOTE : If grease doesn't remain on the splines, apply anti-seize compound to the splines, before installing the steering wheel.

ROPS INSTALLATION

Put harness through into the lower ROPS frames.

NOTE : Use the hardware from the ROPS wire harness.





NOTE : use the Hardware from the (CARTON BOX Hardware(for ROPS)

1. Remove the M12 bolts and nuts from the fender where the ROPS frame connects to the tractor.
2. Connect the lower ROPS frame onto the each frame support of the fender with bolts, spring washers, & nuts. Do not tighten bolts firmly.
3. Place the foldable ROPS frame upper on top of the left and right ROPS lower frames, and fasten them together using two M16 bolts, pins, & lock nuts.

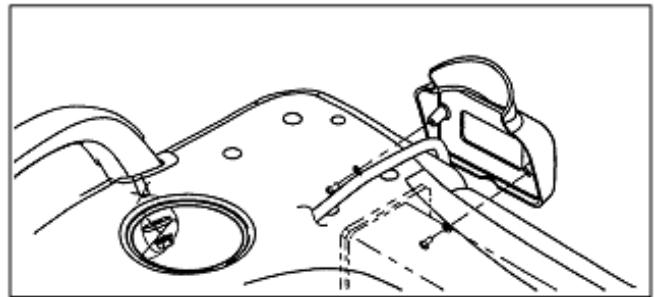
NOTE : Tighten lock nuts enough until, ROPS frame upper can still pivot on left and right ROPS lower frames.

4. To secure the foldable ROPS frame upper in the upright position insert the clevis pin and spring. Install two M10 x 16 bolts and two M10 nuts onto each ROPS frame upper.
Torque to 44-56 N · m
5. Tighten M12 bolts and nuts of each lower frame support. **Torque to 65-83 N · m**

Important : Tighten all the ROPS mounting hardware to the proper torque at this time!

REFLECTOR INSTALLATION

Install the reflector by using M4 screws and washers (2 points) working from inside of the fender fitting hole. • At this time. The parking brake wire must protrude from upper part of the reflector.

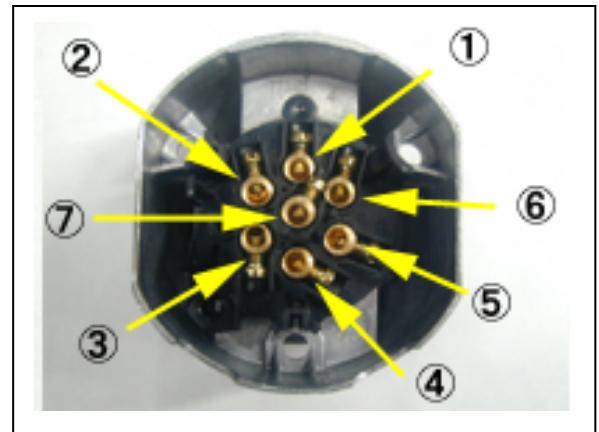
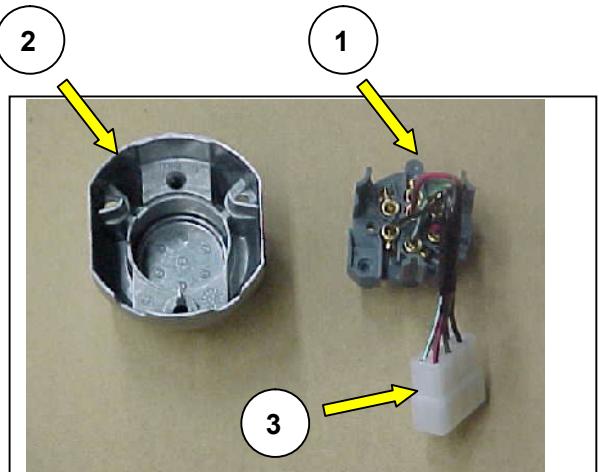


TRAILER SOCKET PRE ASSEMBLY

NOTE : Use the hardware from Trailer coupling set-Socket / Wire harness (for Trailer socket)

1. Remove the connector,1, from socket,2.
2. Connect the wire harness,3,to the connector,1.

Terminal number of connector	Color of connected harness
①	Green / Red
②	not connect
③	Black
④	Green / White
⑤	Red
⑥	Green / Orange
⑦	Red / Black

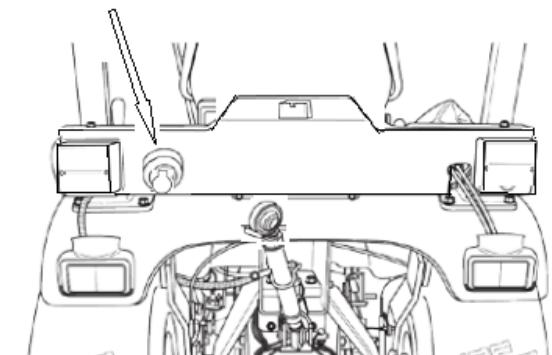


REAR BOARD PRE ASSEMBLY

NOTE : Use the hardware from Rear board assembly / Rear board wire harness / Bolt kit (for Trailer socket (M5)).

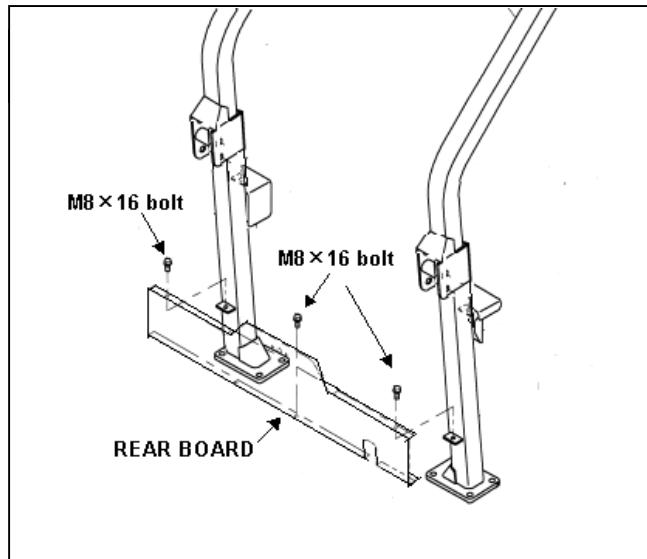
1. Install Trailer socket to Rear Board with M5 bolt, lock washer and nut.
2. Connect lamp wires to same color ones. Connect part to be covered by vinyl tube to avoid short circuit. Connect the socket of a Rear Board and the socket of a Rear Board wire harness.
3. Clamp the Rear Board wire harness to a Rear Board.

Trailer Socket



REAR BOARD INSTALLATION

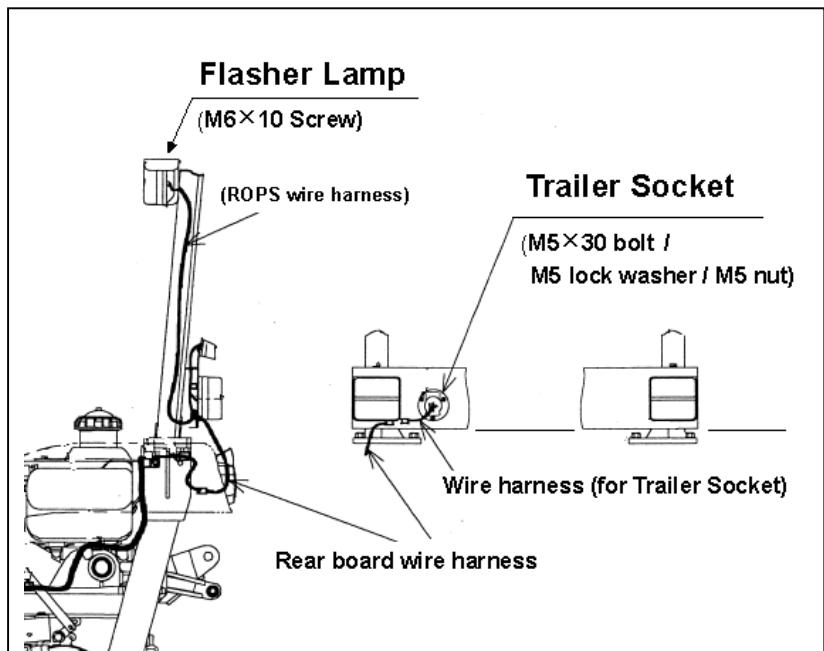
1. Install the Rear Board to frame with M8 bolts.
2. Connect the socket of a Rear Board wire harness and the socket of a ROPS wire harness.



FLASHER LAMP INSTALLATION

NOTE : Use the hardware from Hazard combination lamp (FLASHER).

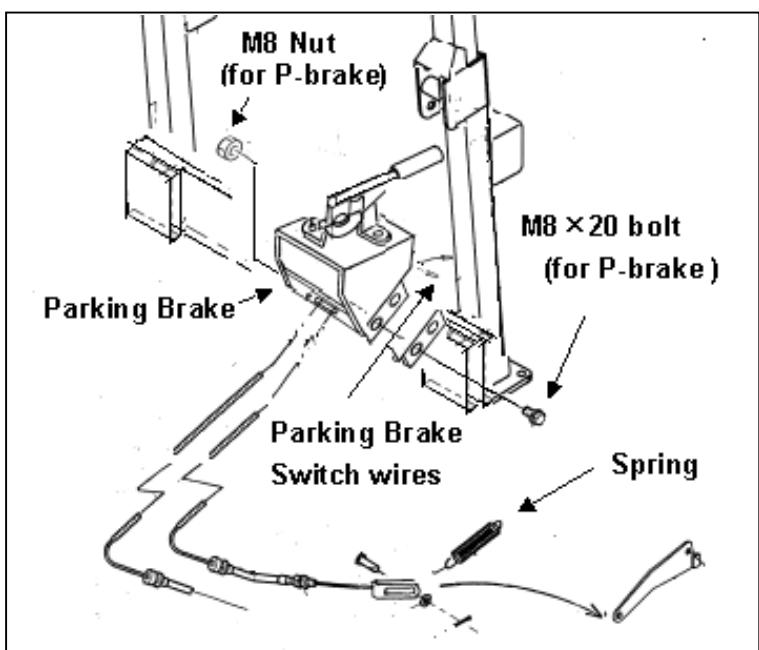
1. Connect lamp wires to same color ones. Connect part to be covered by vinyl tube to avoid short circuit. Connect the socket of a Flasher Lamp and the socket of a ROPS wire harness.
2. Install the Combination Lamp Assy to frame with M6 bolts. Install both assemblies with Yellow lens upward.



PARKING BRAKE INSTALLATION

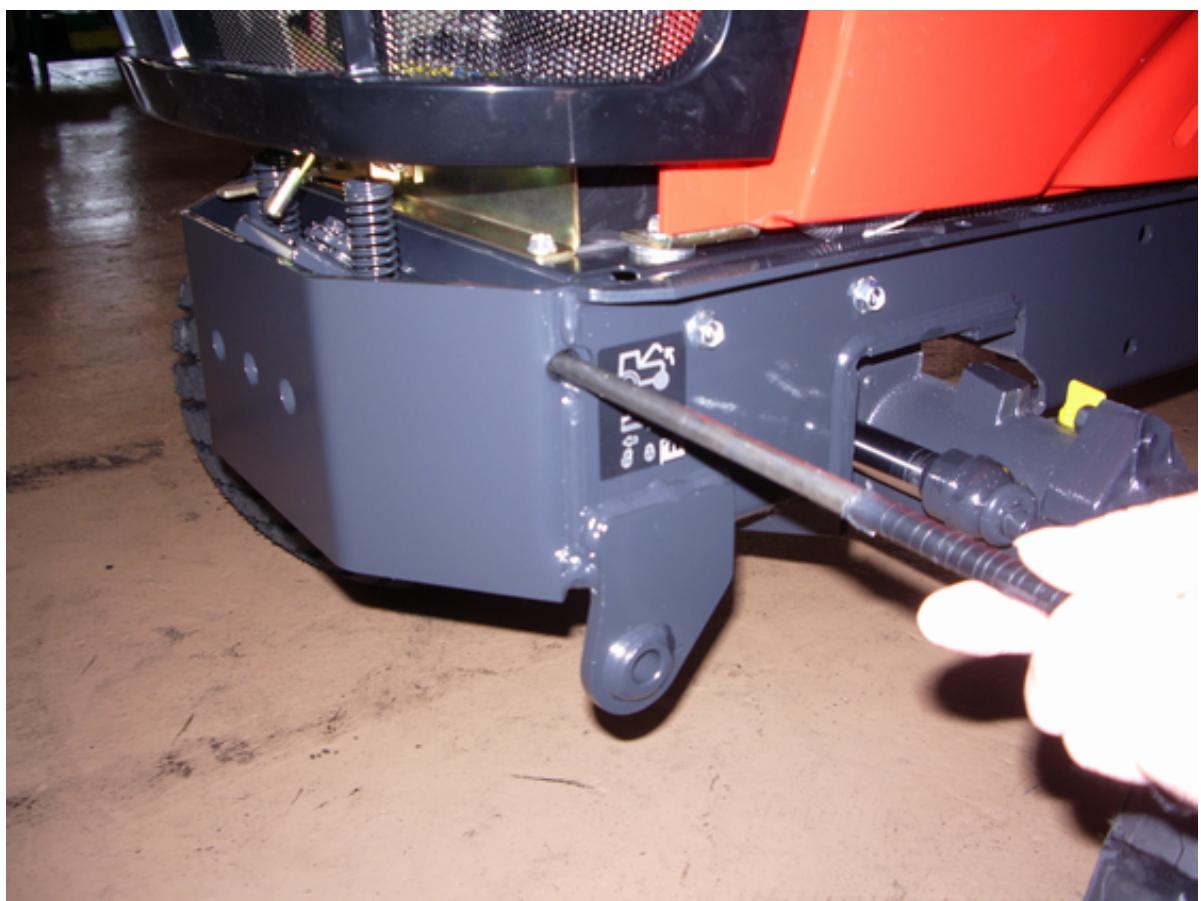
NOTE : Use the hardware from **M8 bolt (for P-brake (8-20))** and **M8 Nut (for P-brake)**

1. Install Parking Brake onto the ROPS bracket with M8 bolts, and nuts. Attach a Parking Brake in the bracket.
2. Connect Parking Brake Switch wires connector to the same color harness sticking out from the rear board wire harness. Connect part to be covered by vinyl tube to avoid short circuit.
3. Cover brake with boot.
4. Hang a spring on the hole of the bracket of the frame.



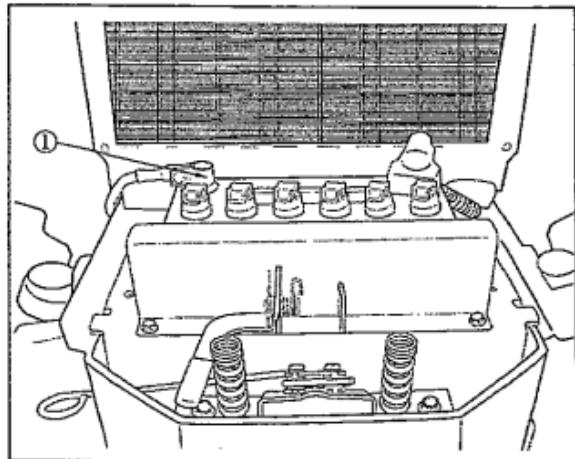
NOTE : HOW TO RELEASE THE LATCH TO OPEN THE HOOD

Insert the tools about 300m/m length round stick from the hole of the bottom of the left side of the battery stand, and slide it to inside . Then the latch of the bonnet is removed.



BATTERY CABLE INSTALLATION

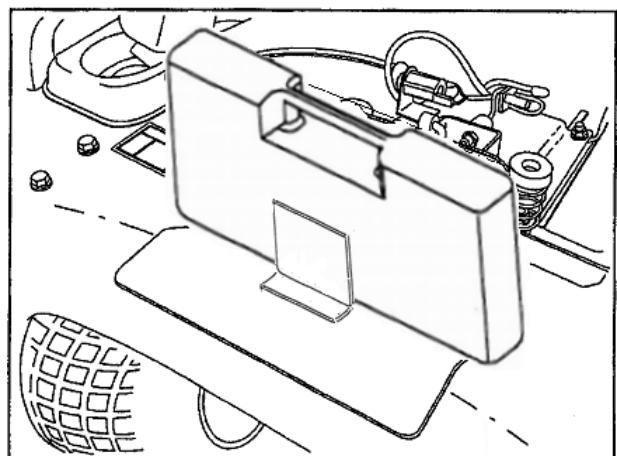
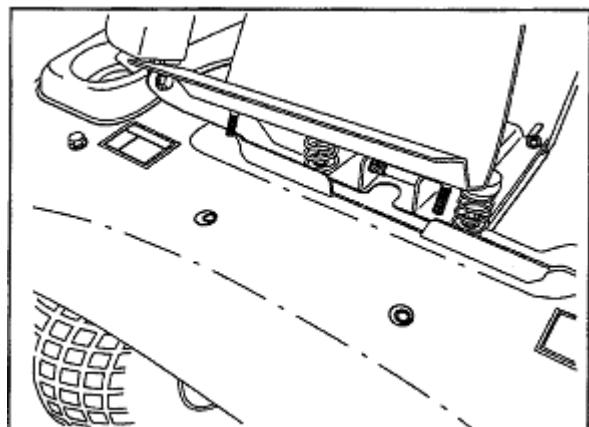
1. Connect the negative(-) battery cable,1, to the negative(-) battery terminal.

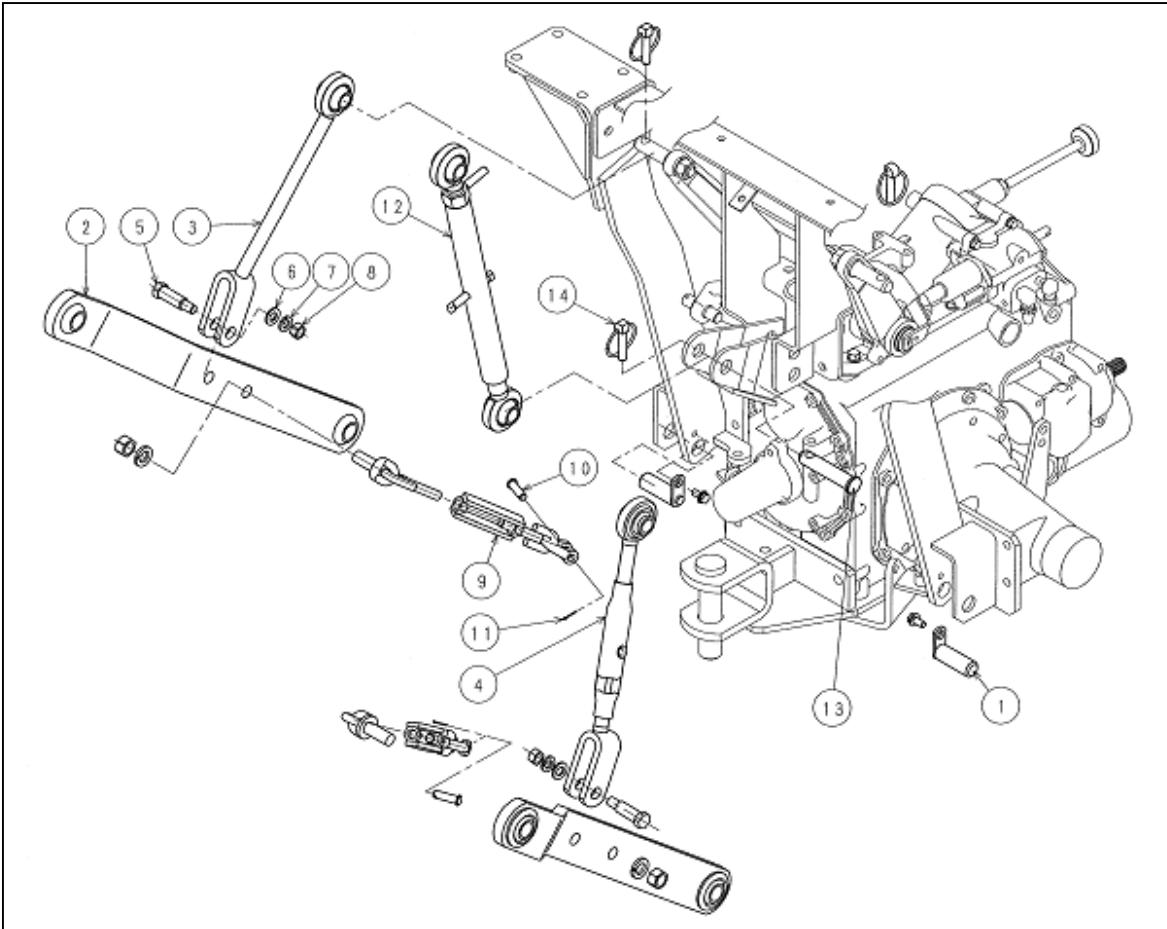


TOOL BOX INSTALLATION

NOTE : Use the hardware from Tool box./Holder /M8 bolt (for Holder)/M8 Nut (for Holder)/ Lock washer (for Holder) /Collar

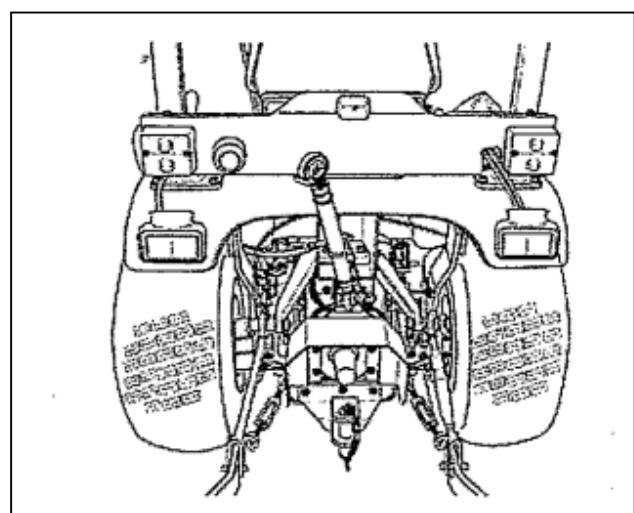
1. Install two collars into the holes of the fender
2. Install the tool box holder on the fender with two M8 bolt lock washers and nuts.
3. Place the Tool box on the tool box holder





THREE POINT LINKAGE INSTALLATION

1. Remove the joint pins,1,for the lower link bars, (already installed on the tractor).
2. Install the lower link bars,2, and fasten the joint pins.
3. Install the left rod,3,onto the upper lift arms, secure with lynch pins. Install the adjustable rod,4, onto the R.H. side.
4. Attach the lift rods to the lower link bars with the shoulder bolts,5,flat washer,6, lock washer,7, and nut,8, **Torque to 65~83 N · m**
5. Install the check chain,9, to the lower link bars. **Torque to 86~110 N · m**
6. Attach the check chain clevis to the tractor, secure with clevis pin ,10, and split pin,11.
7. Install the top link rod,12, fasten with link pin,13, and lynch pin ,14.

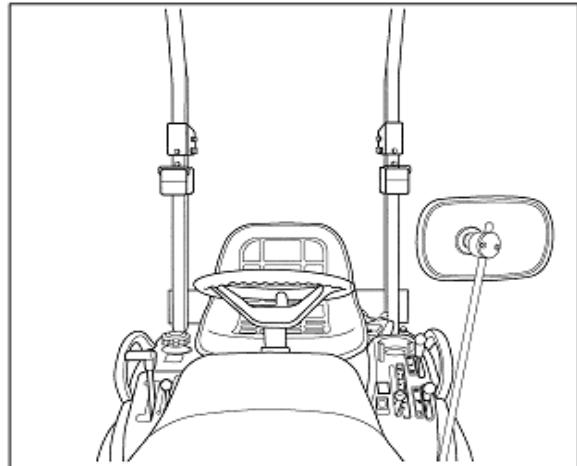


REAR VIEW MIRROR INSTALLATION

1. Install mirror stay to ON R/H side or ON L/H side with M8 bolts, and nuts.
2. Install Mirror to mirror stay with the screws.

NOTE : UK: ON R/H side

Non UK: ON L/H side



BEFORE OPERATION

Before operating the tractor, check the following fluid levels, and add per specifications listed in the tractors operator's manual as needed.

- Engine oil.
- Engine coolant.
- Transmission oil.
- Fuel.
- Front Axle(FWD)

SAFETY START SYSTEM

All the following procedures must be performed so the tractor will start:

- Operator is sitting in the seat or the parking brake is engaged.(The tractor would be able to start without the operator in the seat however, having an operator in the seat is recommended starting procedure.)
- Range lever is in the “Neutral” position.
- The PTO clutch lever is in the “disengaged” position.

If any of the above are not performed the tractor will not start.

**WARNING : Sit in the operator' s seat
and the parking brake is
engaged when starting the
tractor. Never attempt to start
the engine while standing
beside the tractor.**

CHECK THE FOLLOWING ITEMS :

- Inspect all operating and safety decals for proper installation or damage.
- Brake and pedals for proper operation and adjustment.
- PTO shield and cap are installed.
- All lights (hazard, turn, taillight and headlights for proper function).